

Sept. 15, 1931.

E. J. BISKAMP

1,823,583

DISHWASHER

Filed Nov. 12, 1929

3 Sheets-Sheet 1

Fig. 1.

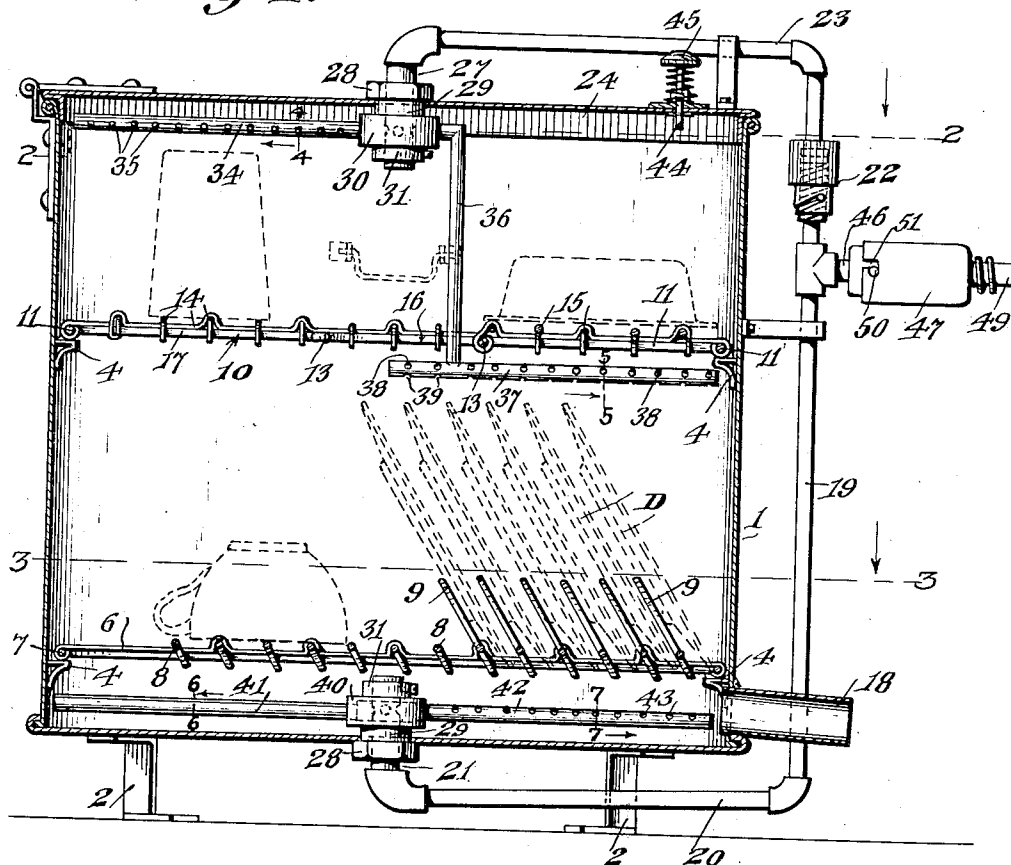


Fig. 9.

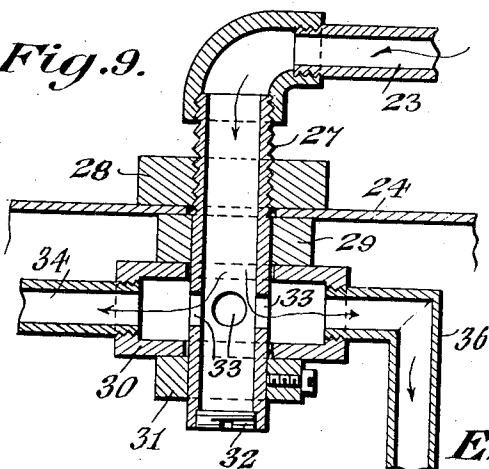
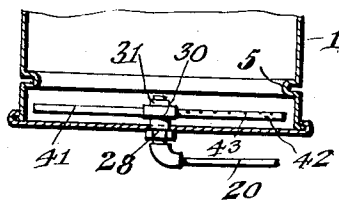


Fig. 12.



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Fig. 2.

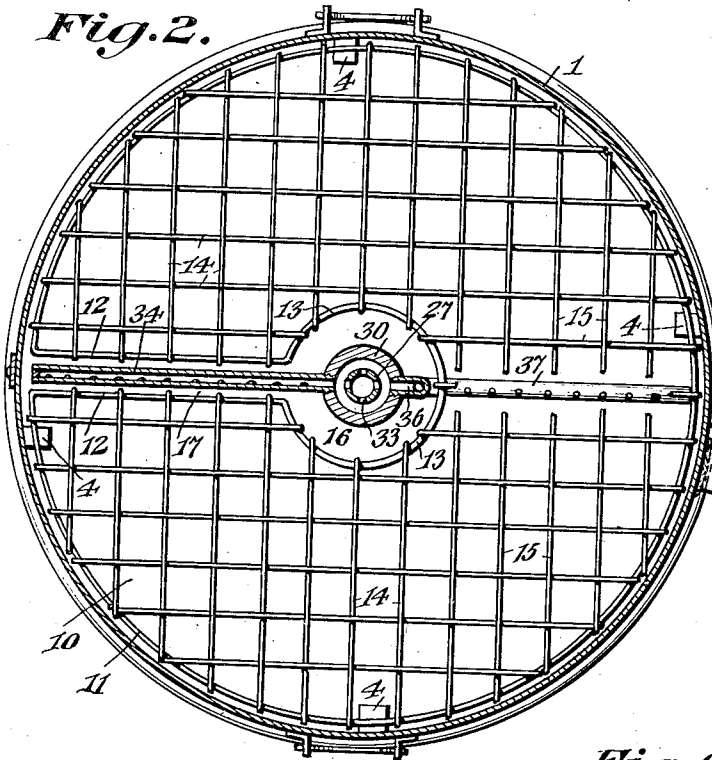


Fig. 4.

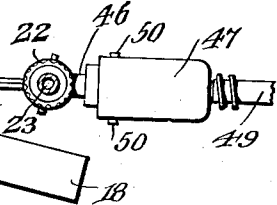
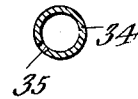


Fig. 5.

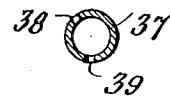


Fig. 6.



Fig. 7.



Fig. 10.

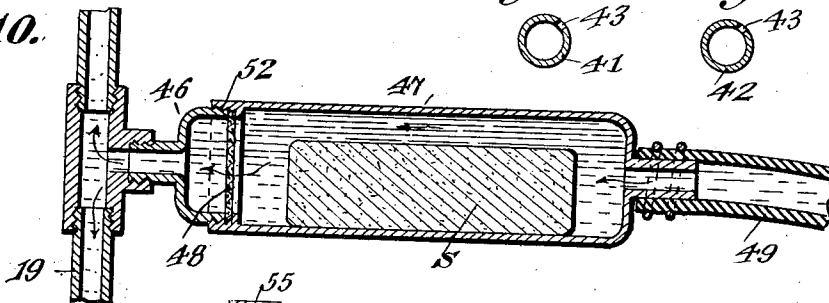
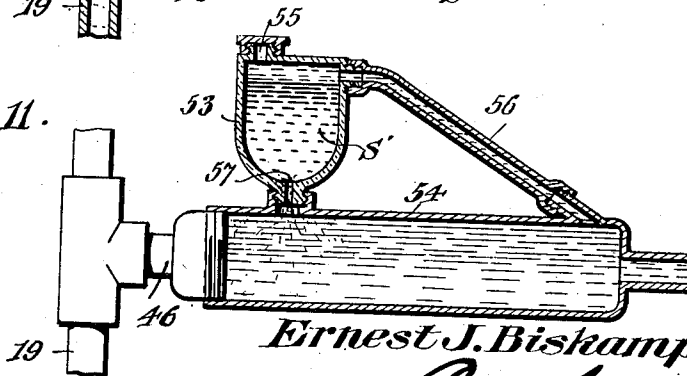


Fig. 11.



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Fig. 3.

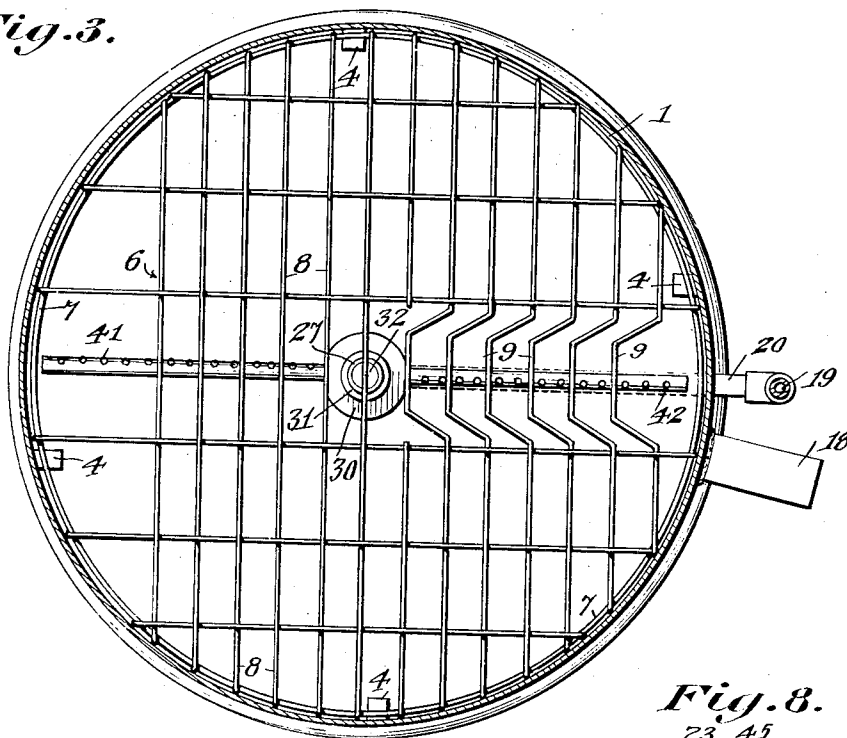


Fig. 8.

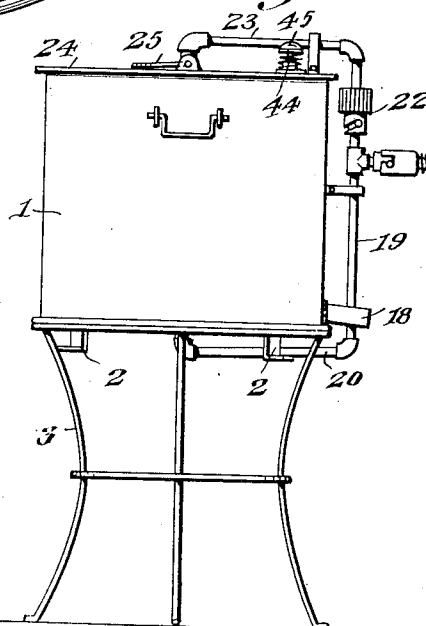


Fig. 13.

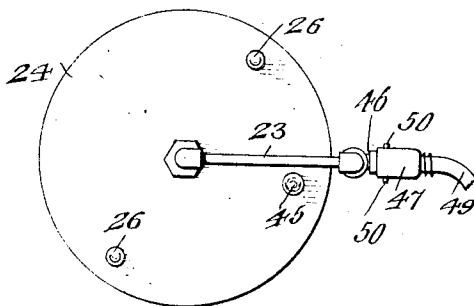
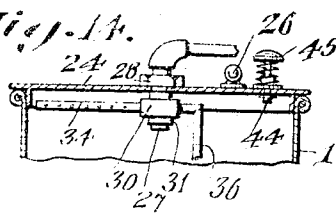


Fig. 14.



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UNITED STATES PATENT OFFICE

ERNEST J. BISKAMP, OF SAN ANTONIO, TEXAS

DISHWASHER

Application filed November 12, 1929. Serial No. 406,849.

This invention relates to dish washing machines. One of its objects is to provide a portable structure which can be set up readily in a sink, on a drain board, or on a suitable stand and, by connecting it to a hot water faucet, can be actuated efficiently without requiring the use of a motor or any mechanism of a complicated and expensive nature.

Another object is to provide an apparatus of this character through which there is a constant flow of fresh water which serves not only to thoroughly clean the contents of the washer but also to promptly remove the foreign substances.

A further object is to provide a washer all parts of which are easily accessible for the purpose of cleaning them or making repairs.

A still further object is to provide a washer utilizing superposed rotatable spraying elements between which may be placed the articles to be washed, the upper element or elements being removable with the cover of the washer thereby to permit convenient placing of the dishes, etc. in position to be washed.

Another object is to combine with the machine a simple and efficient means for supplying soap to the water being directed onto the articles being washed.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred forms of the invention have been shown.

In said drawings,

Figure 1 is a vertical section through a washing machine constructed in accordance with the present invention.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is an enlarged section on line 4—4, Figure 1.

Figure 5 is an enlarged section on line 5—5, Figure 1.

Figure 6 is an enlarged section on line 6—6, Figure 1.

Figure 7 is an enlarged section on line 7—7, Figure 1.

Figure 8 is an elevation showing the washer mounted on a stand.

Figure 9 is an enlarged vertical section through the connection between the upper sprinkler and the supply pipe.

Figure 10 is an enlarged section through the soap container constituting a connection between the machine and the water supply.

Figure 11 is a section through a modified form of soaping means.

Figure 12 is a section through the lower portion of a modified form of casing.

Figure 13 is a plan view showing a modified form of cover for the casing.

Figure 14 is a section through the structure shown in Figure 13.

Referring to the figures by characters of reference, 1 designates a casing preferably cylindrical having short legs 2 extended from the bottom thereof whereby the machine can be supported in a sink or on a drainboard. If preferred, however, casing 1 can be mounted directly on the top of a supporting stand such as shown at 3 in Figure 8.

Suitably located supporting lugs 4 are extended inwardly from the wall of the casing at points where it is desired to support racks for holding dishes and other articles to be cleaned. If preferred, however, and as shown in Figure 12, the casing can be provided with one or more ribs 5 pressed inwardly therefrom for supporting the racks.

In the structure illustrated there is provided a lower rack and an upper rack. Both racks are formed of stiff wire. The lower rack 6 includes a ring 7 across which are extended interwoven wires 8 widely spaced so as to offer the minimum obstruction to the flow of water. Certain of the wires have their middle portions bent to form upwardly extending inclined yokes indicated at 9. These yokes, as shown particularly in Figure 1, are adapted to support dishes in inclined posi-

tions and spaced apart. The dishes have been indicated by broken lines at D.

As illustrated in Figure 2, the upper rack 10 is formed of a wire ring 11 having inwardly extended spaced parallel portions 12 which merge into a central inner ring 13 concentric with the ring 11. The inwardly extended portions 12 and the inner ring 13 are connected to the ring 11 by crossed interwoven wires 14. Additional wires 15 which are likewise interwoven, extend across and are connected to the ring 11 at points where they are not intersected by ring 13 or the inwardly extended portions 12. The rack constructed as described is left with a central clearance 16 from which extends a radial clearance 17 opening through the margin of the rack.

Extending from the bottom portion of casing 1 is an outlet spout 18 and securely fastened to the outer side of the casing by any suitable means is a distributing pipe 19 the lower portion 20 of which is extended under the bottom of the casing and opens into a spraying pipe 21 which will be hereinafter more fully described. The upper end of pipe 19 is connected by a quick detachable coupling 22 of any desired construction to a distributing pipe 23 which extends over and is suitably connected to the cover 24 of casing 1. This cover is removably mounted on the casing and can be lifted by means of a bail 25 or by means of knobs 26 shown in Figure 13.

Distributing pipe 23 opens into a pipe 27 which projects downwardly through the center of the cover 24. As shown particularly in Figure 9, this pipe 27 is engaged by a nut 28 which rests on the cover 24. A spacing washer or nut 29 extends around the pipe 27 and engages the bottom surface of the cover. This spacing element is adapted to receive thrust from a hollow hub 30 rotatable on the pipe 27 and supported by a collar 31 which is detachably secured to the said pipe. The lower end of the pipe 27 is closed by any suitable means such as a screw plug 32 and communication is constantly maintained between the interior of the said pipe and the interior of the hub through apertures 33.

A spraying pipe 34 extends radially from the hub 30 and opens thereinto. This pipe extends close to the wall of the casing 1 and is supported close to the cover 24. It has a series of apertures 35 extending longitudinally thereof, these apertures being inclined downwardly in such a direction as to cause the pipe and hub to rotate when water or other liquid is discharged through the apertures.

Another pipe 36 is extended from the hub 30 downwardly through the clearance 16 and opens into and supports a spraying pipe 37 arranged under but close to the rack 10. This spraying pipe is of a length less than the combined lengths of the clearances 17 and 16

so that, when the pipe is positioned beneath said clearances, it can be withdrawn upwardly therethrough. Pipe 37 is extended close to the wall of casing 1 and has upper and lower longitudinal series of apertures 38 and 39. The apertures 38 are adapted to direct jets of water upwardly toward rack 10 while the apertures 39 direct jets of water downwardly toward rack 6. Both series of apertures are so pitched as to cause the spraying pipe and the hub 30 to rotate in the same direction as these parts are propelled by water issuing from pipe 34.

The lower pipe 21 is constructed the same as pipe 27. The hollow hub 40 which is rotatably mounted thereon has spraying pipes 41 and 42 extending radially therefrom. Both of these pipes have upwardly inclined apertures 43 arranged in longitudinal series for directing jets of water upwardly toward rack 6 and at the same time rotating the pipes and the hub 40 in a direction opposite to that in which the upper hub and its pipes rotate.

For the purpose of limiting the rotation of the hub 30 and the pipes carried thereby, a yieldingly supported plunger 44 is slidably mounted in the cover 24 and is normally held out of the path of pipe 34. This plunger has a head or button 45 by means of which it can be depressed readily to bring the plunger into the path of pipe 34. Thus the pipe will be brought to a stop by the plunger at a point where the pipe 37 will be positioned under the clearances 16 and 17. Consequently, by uncoupling distributing pipe 23 from distributing pipe 19, the cover can be raised and pipe 37 can move upwardly through the clearances without disturbing the rack 10 or any of the articles supported thereby.

The distributing pipe 19 has a nipple 46 opening thereinto. This is adapted to be detachably engaged by a soap container 47. The outlet end of the container may be provided with a screen 48 for preventing particles of soap from flowing into the machine. A hose 49 is connected to the other end of the container and constitutes a means for directing hot water from a faucet or other outlet to the machine. The soap container 47 can be connected to the nipple 46 by means of a stud 50 adapted to be received by a bayonet slot 51 as shown in Figure 1 or it can be screwed onto the nipple as shown at 52 in Figure 10. A small cake of soap indicated at S is adapted to be held loosely in the container 47 so that the water flowing through the container will slowly dissolve the soap and carry it to the spraying pipes.

If desired, liquid soap can be supplied to the machine. For this purpose a soap container 53 can be supported upon and open into a container 54 similar to container 47. Soap container 53 has a normally closed inlet 55 at the top thereof and a by-pass 56 extends from container 54 to the top of container 53. The

pressure of water in the by-pass and on the soap S' will cause a portion of the soap to be pressed through the small outlet 57 opening into container 54.

5 It is intended generally to use just enough soap in the machine for one washing and after the soap has been used and the dishes cleaned, continued supply of hot water to the machine will result in the thorough rinsing
10 of the dishes with clear hot water.

It is believed that the operation of the machine will be obvious. The dishes and other articles to be cleaned are placed on one or both of the racks after which the cover is
15 placed in position and the pipes 19 and 23 coupled together. The proper amount of soap is placed in the container provided therefor, said container is coupled to the nipple 46 and hot water is then directed into the
20 machine through hose 49. The reaction of the jets of water will cause one set of spraying pipes to revolve in a clockwise direction while the other set will revolve in a counter-
25 clockwise direction.

The rotation of the sprinkling pipes will cause jets of water to be thrown upwardly and downwardly against the articles to be cleaned and the dirty water will flow outwardly through the spout 18. After the soap
30 has been used up, it will be followed by sprays of clear water which will rinse the dishes and thereafter the supply of water can be cut off, plungers 44 depressed to stop the upper
35 sprinkling pipes at the proper points, the cover raised, and the articles removed from the racks.

What is claimed is:

40 1. A dish washer including a casing, a rack therein, a hub mounted in the casing, upper and lower sprinkler pipes connected to and rotatable with the hub and movable in planes
45 above and below the rack, and means for directing liquid into the hub and sprinkler pipes to rotate the hub and pipes and direct jets of liquid downwardly and upwardly toward the rack, there being a clearance in the
50 rack for the withdrawal of one of the sprinkler pipes therethrough.

2. A dish washer including a casing, a pipe extending thereinto, a hub mounted for rotation upon and communicating with the pipe,
55 upper and lower sprinkler pipes supported by and opening into the hub, each of said pipes having a series of apertures for the escape of jets of liquid adapted to rotate the pipes and hub, means for directing a liquid
60 into the hub, a rack supported between the paths of movement of the pipes and having a clearance for the passage of a pipe there-through, and means movable into the path
65 of one of the sprinkler pipes for stopping the

pipes with the lower one in position beneath the clearance.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

ERNEST J. BISKAMP.

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